

ABSTRACT OF THE DISCLOSURE

MOS transistors have an active region defined in a portion of a semiconductor substrate, a gate electrode on the active region, and drain and source regions in the substrate. First and second lateral protrusions extend from the lower portions of
5 respective sidewalls of the gate electrode. The drain region has a first lightly-doped drain region under the first lateral protrusion, a second lightly-doped drain region adjacent the first lightly-doped drain region, and a heavily-doped drain region adjacent to the second lightly-doped drain region. The source region similarly has a
10 first lightly-doped source region under the second lateral protrusion, a second lightly-doped source region adjacent the first lightly-doped source region, and a heavily-doped source region adjacent to the second lightly-doped source region. The second lightly-doped regions are deeper than the first lightly-doped regions, and the gate electrode may have an inverted T-shape.